

### **Remarks**

A reconsideration of the present application is respectfully requested. Applicants' response will proceed in the same chronological order as provided by the Examiner in the aforementioned Office Action.

As shown in the above listing of claims, Applicants' have amended claims 1, 6, 12, 16, 18 and added claims 26 and 27. Claim 1 is being amended to distinctly claim a computer implemented mapping method to overcome the 35 U.S.C. §101 rejection. In addition, claim 1 is amended to provide clearer meaning to the claim by adding statutory subject matter needed to provide better clarification by modifying the preamble of the claim. Claim 6 is being amended to provide a clearer understanding to how the pruning algorithm is performed. Claim 26 is a new dependent claim to claim 1 that describes a non-probabilistic weight within the invention. Claim 27 is a new dependent claim to claim 4 and is being added to better describe the algorithm for data aging.

Claims 12, 16 and 18 remain in the application. The latest Action rejected claims 12, 16 and 18 under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter, which the applicant regards as the invention. In this regard, "Bayesian-type" has been deleted from the claims. The traditional Bayesian network is mentioned in the specification as a probabilistic acyclic decision-graphing network that relies upon probabilistic decision-making using non-directed cycles (page 11, lines 13-17). Applicants' used the term Bayesian-type Belief Network within the specification to describe an exemplary difference between a traditional Bayesian network and the present invention. Further, at

the time of the filing of this application, a Bayesian network represented a concept that was considered to be variably relatable to, yet, distinctly different from a non-probabilistic network since Bayesian networks do represent probabilistic relationships between items. Applicant describes and claims a relationship strength (weight) between the relationship links being formed and updated within a network structure that allows cycles and other structures with no limitations (page 11, lines 17-22) so that data mining can be effected via a system which learns relationships between documents (items). Since the Applicants' invention does not employ a probabilistic network, but rather, a weighted or deterministic/non-probabilistic network, describing the invention as non-probabilistic would be clearly understood by one skilled in the art.

The specification of this application is complete with reference to a network that is clearly defined as non-probabilistic. Further, claim 9 recites, "...relationship link is positioned in a list in direct proportion to the degree of consensus among said ensemble of algorithms." In other words, the relationship links are positioned according to the maximum link (strength) value. The "strongest" relationship link will always be in the same position (strong being defined as having the most consensus). A user will always be able to identify which relationship link is the strongest (having the most consensus). Navigating the network by following the relationship link with most consensus will always give the same end result. Accordingly, the network is deterministic/non-probabilistic.

To clearly understand the difference between a "deterministic/non-probabilistic" network over a "probabilistic" network, one needs only to refer to page 6, lines 19-21 of the specification. Note the following: "When a navigation from one

informational item to another item is detected, the relationship type and the relationship strength of the two informational items are determined and stored in a database.” The relationship strength (and thus its weight) are determined and stored from an initial navigation of a network. On (page 6, line 21) to (page 7, line 2), applicant states, “During a subsequent selection of an informational item, any informational items related to the selected informational items may be presented to the user, sorted based on the respective types and relationship strengths, and may be provided in a sorted list from which the user can select.” During a subsequent selection of these informational items (or any two or more informational items with relationship type and strengths previously “detected” and stored), a list of related items are presented, whereby the user can identify the strongest related item to navigate to. There are no probabilities associated in this teaching. The user can identify which related item has the strongest association with the currently selected items. Moreover, the relationship links of the network are updated to reflect the new relationship strengths and relationship types. Essentially, a new network is created (there is one network for all users). The network is fixed until either data-aging occurs or until additional information on relationship type and strength is detected and stored. The term “probabilistic” implies a degree of uncertainty. Thus, the network described by the invention is non-probabilistic based upon the deterministic/non-probabilistic qualities of the network. It is “certain” that a user will be directed to a link based on the weighted strength of the link. The data-aging process and the storing of additional information is deterministic.

Claim 1, as amended, and claims 2, 4-12 and 14-22 remain in the application. In view of the claim rejections of 35 U.S.C. §102 claims 1-2, 4-11 and 14-

15, 17, 19-22, within the latest Action under 35 U.S.C. §102(e) as being anticipated by Horvitz et al. (U.S. Patent No. 6,182,133), Applicants respectfully traverses each and every rejection, and a request for reconsideration of the rejected claims regarding the present application in light of the above amendments shown within the listing of claims, and the arguments below, which will be presented in the order found in the Action.

Horvitz specifically teaches a network relying upon probabilistic likelihood within the models being taught (Col 4, lines 8-10), (Col 5, lines 35-54), (Col 15, lines 37-40), (Col 24, lines 56-64), (Col 25, lines 7-8, and 19-24), (Col 27, lines 31-36, and lines 58-60), (Col 28, lines 17-22, and 59-62), (Col 32, lines 7-10), (Col 33, lines 44-46), (Col 35, lines 18-19), (Col 38, lines 30-31), (All of Column 42), (Col 43, lines 30-46), and further throughout the Patent. Horvitz emphasizes that these are statistical probabilistic user models. Nowhere does Horvitz teach a network based on “non-probabilistic” relevance of relationship links using relationship strengths (or weights). Accordingly, Horvitz has been obviated by the clear and distinct language in claim 1 and all claims dependent thereon, as well as other claims of a similar scope.

Examiner rejected Applicants’ claim 1 (and more particularly limitation (e)) based on Horvitz teaching a simple rank ordering at col. 4, lines 39-43. To better understand the meaning of the “simple rank order” described in the summary, Horvitz elaborates in col. 14, lines 4-15, “...saving files in a database, ...creating new records, ...preserving data, ...and other tasks, ...As such, certain tasks can be ranked in terms of their future importance, which may include, e.g., future availability of results from those tasks, or at least qualitative importance to the user.” In col.14, lines 22-25, Horvitz states, “...a fixed value or qualitative ranking in terms of its importance vis-à-vis other

such task instances, the task instance then possesses the highest value or importance (quantitatively or qualitatively)..." In col. 14, lines 36-41, Horvitz adds, "Should the ranking reveal two (or more) task instances that then possess the same highest equal value or importance, then any of these particular task instances could be selected, on an indifferent basis, and be subjected to any portion of the available time for precomputation during an associated idle-time interval." Further, in col. 24, lines 65-67 and col. 25, lines 1, please note the following: "The predictor, given these probabilities, ranks the URLs, rank ordered in descending order of their transition probabilities to URL retrieval component and data receiver."

Horvitz by its own admission builds statistical user models (cols. 24 and 27). Further, Horvitz teaches rank ordering within what is described as a "probabilistic user model." This clearly teaches away from applicants' invention. Particularly, applicants' method self organizes based on user actions over a period of time. No models are recited and most certainly, no "probabilistic models" are even contemplated. This significant difference should obviate Horvitz as a reference versus any of the claims of this subject application. Therefore, Horvitz's teaching of "a simple rank ordering," is not the same or even remotely similar to applying an ensemble of clustering.

In regards to claim 4, rejection was based on U.S.C. §102(e) as being anticipated by Horvitz et al. In this regard, Horvitz describes a visual aging manner for displaying previously viewed hotlinks. Based on a hotlink being stored within a cache, a color-coding scheme is used to display to a user whether a hotlink has been previously fetched or viewed. Applicants' claim describes a step for applying an algorithm for data aging, wherein the usage of the relationship link is monitored and used as feedback for

the weight associated with the relationship link. This claimed distinction is clearly different from the teaching of Horvitz.

Claims 5-7 have been rejected in accordance to U.S.C. §102(e) as being anticipated by Horvitz et al. In (Col. 4, lines 50-62) of Horvitz, with the Examiner stating that the patent teaches, "...the concept of prematurely terminating a current information download, in favor of prefetching a web page that will be accessed in the future." This passage has no relation to Applicants' claimed limitation of applying an algorithm for pruning a database based on the usefulness of at least one relationship link, which is used to modify the weight or existence of a recorded relationship link. In Horvitz, col. 5, lines 11-18, the patent states: "Consequently, downloading of the current information is prematurely terminated or slowed (retarded) in favor of then prefetching the futures web page..." Again, there is no correlation between the claimed limitations recited herein.

As to claim 9 being rejected under U.S.C. §102(e) as being anticipated by Horvitz, the Examiner quoted col. 10, lines 47-61 in Horvitz. Horvitz specifically teaches "...a pop-up or pull-down list of prefetched cached times-with the entry being appropriately colored or not, if desired, to reflect its relative latency" (col. 10, lines 49-51). Horvitz is describing a list stored within a web browser that signifies the relative latency of a cached item. However, applicants' claims are directed to a relationship link that is positioned in a list in direct proportion to the degree of consensus among said ensemble of algorithms. This means that a list will be retrieved from a database (page 13, lines 8-10) and is yet another significant difference between what is being claimed and the teachings of the known prior art.

Claim 10 of the Applicant has been rejected under §102(e) as being anticipated by Horvitz et al. As to Examiner's citation of Horvitz (col. 11, lines 6-12), Horvitz does not teach algorithms based on a "non-probabilistic" network as described earlier.

Claim 11 was rejected under §102(e) as being anticipated by Horvitz et al. in respect to the Horvitz citation (col. 12, lines 1-20). Horvitz distinctly teaches in lines 24-27, "Rather than merely waiting during each idle-time interval, the operating system, during the onset of that period, probabilistically analyzes future task instances to select a given task for precomputation." Applicants' claim the step of merging the outputs of said ensemble of algorithms. It is clear that Applicants' refer to the merging of outputs and not idle-time dependency of an operating system. Based on Horvitz teachings and the above prior comments, Horvitz does not anticipate.

Claims 14-22 are rejected under §102(e) as being anticipated by Horvitz et al. Based on the non-probabilistic discussion above, Applicants respectfully request withdrawal of the pending rejected claims based on the arguments previously mentioned.

In response to the §103(a) rejection of Claims 23-25 as being unpatentable over Horvitz et al. (U.S. Patent No. 6,182,133) and in view of Zellweger (U.S. Patent No. 5,630,125), Zellweger teaches an informational management system that enables a user to create a customized information system that runs stand-alone on an end-user's computer. More importantly, Zellweger produces a system that enables an author to customize features for each application he or she creates. Thus, Zellweger is limited to a system that is available to only one user, the user or author that customizes the system. This is directly opposite the method claimed in claim 23, as amended, in which the stored

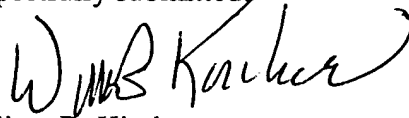
context and path are made available to any subsequent user. Thus, in the method claimed in claim 23, subsequent users may benefit from the actions of previous users. In Zellweger, the only person who benefits from a user's actions is the user himself. Zellweger, therefore, does not teach or suggest the storing limitation found in claim 23 and the combination of Zellweger and Horvitz does not render claim 23 or the claims depending from claim 23 unpatentable. Applicants' therefore find no suggestion or motivation to combine the teachings of Horvitz and Zellweger to explicitly or implicitly show a combined teaching to establish a prima facie case of obviousness against Applicants' invention. After reviewing the teachings of both Horvitz and Zellweger, it is not apparent to one skilled in the art to combine the two differing teachings to show obviousness over the Applicants' invention. Nonetheless, even if combined, these claim limitations are not met.

For the reasons stated above, all original, added and amended claims are in condition for allowance. Further, there is sufficient disclosure within the present application to support the amended claims, which clearly do not anticipate or provide a case of prima facie obviousness in view of Horvitz. Moreover, the combination of Horvitz and Zellweger provides no suggestion or motivation to render Applicants' claims 23-25 unpatentable. Applicants respectfully request withdrawal of the pending rejections and an early Notice of Allowance of the above-mentioned claims. If any issues remain that would prevent issuance of this application, the Examiner is urged to contact the undersigned prior to issuing a subsequent action.



The Commissioner is hereby authorized to charge any additional amount required, or credit any overpayment, to Deposit Account No. 19-2112.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "W B Kircher", written over a horizontal line.

William B. Kircher  
Reg. No. 22,481

SHOOK, HARDY & BACON L.L.P.  
2555 Grand Boulevard  
Kansas City, Missouri 64108-2613  
816/474-6550